Investigating the usefulness of online technology in the teaching and learning of a second language: Two contrasting case studies

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TABLE OF CONTENTS

ABSTRACT

There is a common acceptance that online technologies have the capacity to transform the way we learn. It appears the call for alternative modes of learning and the effective integration of Information Communication Technologies (ICT) into the regular classroom is no longer peripheral. There is sound evidence that increasingly teachers and schools are embracing the technologies available to them. This study examines the merits, barriers and issues associated with the employment of online technologies in the teaching and learning of second and foreign languages. Data is sourced from the views and opinions of five participants from a 'brick and mortar' school, three participants from a virtual school and the perspectives from two outside experts. The findings reveal participants show an overall satisfaction with the usefulness of online technologies. Compatible with the literature, the study shows that there are systemic factors undermining the efforts of individuals to fully utilise the technologies available to them. The overarching epistemology of this research is congruent with an Ecological model. This approach allows for a multi-level perspective of the complexity and disambiguation ICT has thrust upon educators and learners. This paper concludes with a positive view of the usefulness of online technologies and reaffirms what many researchers are claiming; most schools are only at the beginning of their ICT journey.

INTRODUCTION

My interest in this topic was precipitated by my efforts as a classroom teacher and as a school principal to maximise the use of the online technologies available to our school. As a non language specialist, nevertheless someone who is keen to teach and learn a second language (SL), I am of the opinion that online technology is my most practicable resource. In order to gain a greater understanding of the merits and issues associated with integrating online technologies into the teaching of a SL, I embarked on this project. It began as a single case study to investigate the online practices of a high school teacher of Japanese and her students. Unfortunately the initial data collection was deemed insufficient. On advice it was decided to broaden the investigation to a dual case study comparison and one that included online distance learning.

I thought composing a title for this project and formulating an appropriate research question would have been easy, how wrong I was. During the data analysis and writing up phase I kept going back to my question and each time things became cloudier not more transparent. I am not sure if other researchers have encountered this experience. Silverman (2001, p. 270) reminds qualitative researchers of the importance of clarifying intentions. One contributor to my dilemma was not having a clear understanding of the terminology. At this early stage it is important that I elucidate my understanding of several terms used throughout this paper. Firstly the Internet and the World Wide Web (WWW) are terms used in every day conversation without distinction. However, the Internet and the WWW are not one and the same. The Internet is a global data

communications system. It is a hardware and software infrastructure that provides connectivity between computers. In contrast, the WWW is one of the services communicated via the Internet. It is a collection of interconnected documents and other resources, linked by hyperlinks and URLs. After many hours of despair trying to define 'Electronic Learning (eLearning)' and 'online learning,' I have decided to adopt the following interpretations: eLearning is "Learning and teaching that is facilitated by or supported through the smart use of information and communication technologies (ICT's)." This definition has been sourced from Enabling the 21st Century Learner: An E-learning Action Plan for School 2006-2010 (p. 2). I see online learning as a subset of eLearning; I take it to mean the learning generated from the delivery of courses provided by distance organisations using various technologies, including videoconferencing (VC). Lastly ICT is a term that covers all forms of computer, communications equipment and software used to create, store, transmit, interpret, and manipulate information in its various formats. Researchers in the literature often use these terms interchangeably; the reader of this study needs to be aware of my interpretation and usage of the above terms.

This study does not attempt to apply a learning theory to eLearning or online learning. My theoretical position in this project assumes an ecological perspective in an attempt to make sense of the extra-ordinarily complex process of integrating ICT into the teaching and learning in schools. This complexity partly emerges from the knowledge revolution that is shaping the global economy which in turn is being driven by unstoppable changes in the technologies themselves. The complexity is also an effect of various levels of influence: from the education system itself, the multiplicity of functions within schools,

the curriculum, and from an array of social factors such as the community's attitude towards ICT. The main purpose of this investigation is to gain descriptive insights into the practices, perceptions, and interactions that constitute the everyday ecology of a SL 'brick and mortar' classroom and that of a 'virtual' classroom.

No educator or student in the developed world can escape the omnipresence or the impact of ICT (Yelland, 2008, p. 5). Just as the telegraph opened up physical frontiers, the Internet has unlocked virtual frontiers. Innovation and applications associated with the Internet continues to unfold at a frenetic pace (Tsang, Kwan & Fox, 2008, p. 1). The Internet now seems firmly embedded in our everyday lives; it has become integral to the current evolutionary educational phase (Fullan, 2001). The Internet is forcing educators to redefine learning theories and approaches; provocative thinkers such as Pesce (2008) writes, "The computer-or, most specifically, the global Internet connected to it-is ultimately disruptive, not just to the classroom learning experience, but to the entire rationale of the classroom, the school, the institution of learning." Pesce is suggesting the Internet as a tool will revolutionise the way we learn and perhaps redefine our conception of schooling.

As individuals, not only have we become regular users of the Internet, modern society is now dependent upon it, just as a living organism is dependent on its environment. The WWW and now Web 2.0 are seen as socially driven mechanisms (Conole, 2007); albeit organisms allowing people to communicate with one another. As

users of the Web, by default we become its inhabitants (an ecological metaphor). Just as ecological systems contain many living organisms, the Internet is populated with web software that can be compared to living entities (Appleby, 1997; Forsyth, 1999). Bateson's (1972, as cited in Frielick, 2004) notion that we should think of the individual mind as a part of a larger and interconnected web of mental processes, fits well with the ecological paradigm. Seimens' (2008) ecological interpretation extends the notion of interconnectivity to the WWW, suggesting the emergence of interdependence between human and non-human entities. At the 13th European meeting on Cybernetics and Systems Research (1996) mention is made of the existence of 'human/internet symbiosis.' In their 'emerging operational ecology,' they predict the Internet will become a behemoth, due to the fact that it will create so much information, it will pose serious difficulty to peoples' ability to make sense of it all.

Increasingly, schools are being expected to integrate ICT into the curriculum, whilst researchers are calling for the adoption of strategies that will make it integral to teaching and learning (Chandra & Lloyd, 2008; Dakich, 2007, p. 13). According to Fox and Trinadad (2007, p. 68) students today need the skills to enable them to contribute in the world's knowledge based economies. In its quest to create digital-age/21st-century learning in New Zealand schools, the Ministry of Education has developed an ICT strategy based on the merits of digital learning. Laurillard (1993) argues if we are to develop a "knowledge age" education system, it will be through discussion, adaptation

and reflection, which are key elements in the effective use of technology in education, not by technology alone.

There are several arguments being promulgated in support of the usefulness and indeed the huge investments being directed towards ICT integration in schools. This literature review does not attempt to justify or criticise the path most governments are heading down, rather it merely looks to outline the merits and challenges ICT bring to schools and how its usefulness is determined by human factors, more so than the capacity of the technology itself.

LITERATURE REVIEW

The usefulness of online technologies for learning and teaching

Commentators are eager to detail the merits of online facilitated learning. The first part of this discussion focuses on the positive impact of the Internet; the literature cites a number of advantages it brings to brick and mortar classrooms and to regular teachers.

1. First and foremost the Internet enables communication between locations, for example, email and VC. It is a platform for collaboration and problem solving.
2. It enables students to be less dependent on the teacher for access to authorised information and resources (Hedberg, 2005).
3. Students are able to share their work online in the world (Healy 2003). 50% of all students now publish on the Web (iNacal, 2008).

4. As technology advances, not only is it accessible 24/7, wireless Internet is now available anywhere.

Bolstad and Gilmore (2006) and others mention the efficiency ICT brings. Chandra and Lloyd's research suggests eLearning can have a positive effect on student outcomes; nonetheless they reiterate there is a complexity associated with eLearning. Although the literature points to eLearning having a positive effect on student outcomes, it is most likely not in isolation; it is suggested other variables such as teacher enthusiasm, students' motivation and school culture, too, have an impact. Kern, Ware and Warschauer, (2008, p. 290); Oblinger and Oblinger, (2005, p. 1) suggest improved learning is most likely from the facilitation of pedagogical change, not from the technology itself.

Now I switch attention to online learning or virtual schooling. The most commonly cited advantages of online learning is the convenience or flexibility at which one can study, and that it is more student centred (Broadley & Trinadad, 2008, p. 152; Murray, Casey & Fraser, 2007, p. 13). The phenomenon of online learning traditionally associated with tertiary education, is now filtering down to K-12 schools. As technologies have become more advanced, alternative options to traditional classroom learning have become viable. Virtual schooling is one such option, it offers both synchronous and asynchronous distance learning to students who are geographically isolated; or to students who are unable to take a particular subject because of

timetabling, or because it is not offered in their school. In the USA, enrolments in virtual schools are growing exponentially; there are estimates one million students could be enrolled by 2010 (iNacol, May 2008). Patrick (2008) believes online learning brings greater equity to education; students who are often disenfranchised now have far greater opportunities to experience success. Although online learning was spurred by the desire to provide greater equity, it is now viewed as a strategy for achieving educational reform.

Notwithstanding students are advantaged by the access to online technology; teachers are also members of the ICT ecology. Apart from the administrative advantages ICT can bring, teachers are now able to participate in online communities of practice (Lave & Wagner, 1991). Sites like Teachers TV provide the unique opportunity to see into other classrooms and gain insight into how others teach. Practising teachers can join online forums specific to their area of interest; greater opportunities for collaboration and the sharing of ideas are now more achievable.

There is certainly an abundance of commentaries extolling the merits of online learning (taking a course virtually). There seems to be an assumption in the literature that online learning is superior to traditional forms of learning; however there is little evidence to prove or disprove this premise (Chandra & Lloyd 2008). Mention has been made of the efficiencies ICT can bring, however research findings also suggest it can be a double edged sword; it can save time for the learner, as well as being time consuming

in many circumstances (Murray, Casey & Fraser, p. 13; Tamashiro, 2004). Healy (2003) identifies some serious disadvantages of the WWW:

1. It is awash with harmful material
2. Students get overloaded with the vast amount of information
3. Many sites are difficult to negotiate
4. Not all information is authenticated
5. It has become a platform for advertising, many sites are commercially driven.

The need for instruction on how to use the technology and equipment failure, continue to be critical barriers to the effective integration of ICT (Balanskat, Blamire & Kelfa, 2007). While most educators recognise the advantages ICT have to offer, there are those who lament at the challenges it brings to teaching and learning (Oppenheimer, 1997; Cuban, 2001 p. 133). The Steiner schools' philosophy for example; that computers should not be introduced into schools until children become teenagers based on the premise it hinders thought and imagination, acknowledges that not all educators have the same perspectives in regard to the usefulness of ICT.

There is a abundance of research claiming the merits ICT bring to the teaching and learning of SL's. There are also innumerable studies highlighting their deficiencies; Balanskat, Blamire and Kelfa's (2007) review of ICT impact studies in European and United Kingdom schools found ICT had the least affect on modern foreign language pupil attainment, when measured against national tests. On the other hand, researchers are able to demonstrate using online technology has a positive effect on the achievement

levels of SL students (Lai & Kristsonis, 2006; Patrick, 2008). It is important that SL educators recognise both the merits and challenges associated with the integration of ICT. Brutt-Griffler (2008, p. 366) claims there are significant gaps and shortcomings in the literature and calls for further research into the effectiveness of integrating ICT in SL teaching.

The digital generation

Prensky (2001); Oblinger and Oblinger (2005); Warschauer (2007, p. 150) argue that today's students are seemingly different from previous generations due to the fact they have grown up surrounded by digital technology. Prensky (2001, p. 1) refers to today's students as "digital natives," and asserts they are a generation our educational system was not designed to teach. Brown (2006, p. 70) has suggested that digital students have developed their own "vernacular, a screen language for their digital culture." Warlick (2008) believes we are preparing our students for an uncertain future, a future that we are unable to describe. As further democratisation of education evolves, students will begin to expect greater freedom and choice, of when and what to learn. Although students are not demanding fundamental educational change as perhaps envisioned by (Papert, 1993; Laurillard, 1993), their expectations towards learning are quite different to those of their teachers. O'Connell (2007) believes that the world has become 'flat,' synonymous with the computer screen and that students need new communications skills. The Pew Internet Project (2005) reports 'the Internet is an important element in the overall educational experience of many teenagers." O'Connell;

Warschauer and Ware (2008, p. 234) suggest students need to learn new literacies about collaborating and networking, and to be able to create, contribute and connect. 21st century literacy is not just reading and writing per se; but reading words, images, sounds, video, interaction and information navigation (Brown, 2006, p. 3).

Brin (2008) believes the decline of rigorously vetted material on the Internet is a worrisome trend. He reminds us of Carr's (2008) cover story, "Is Google Making Us Stupid?" suggesting whilst students believe they have authority over the technology they use, the technology does not teach them to reflect upon and evaluate the information they are gathering online. Luckin (2007) suggests that today's students are lacking reflective awareness, due to the fact technology makes it easy for them to collate information, but not to analyse and understand it. The role of a teacher therefore remains fundamentally important; the teacher's role changes to imbuing the student with skills to deal with the vast amount of material the Internet generates and the creditability of that information (Neal, 2008, p. 82).

Teacher professional development

If the ultimate aim of ICT adoption is to facilitate effective transformation of learning, then teachers must be a cornerstone of that process. Fullan and Hargreaves (2000) concluded the more powerful a technology becomes, the more vital good teachers are. Although Ham's (2008) ICTPD report to the Ministry of Education suggested the programme had a marked and significant effect on the teachers in respect of the

Ministry's goals; Ledesma's (2006) observation revealed most teachers in New Zealand were not using ICT as part of their normal everyday classroom practice, nor was there evidence that teachers were embracing pedagogical change. The review of the impact of ICT in European and British schools conducted by Balanskat, Blamire and Kelfa, (2007) similarly points to the overwhelming evidence that the majority of teachers have not embraced new pedagogical practices. Baskin & Williams (2006) claim the situation is the same in Australian schools; ICT pedagogy remains largely unaddressed. These findings confirm the urgent need for professional development that focuses on pedagogy; it is no longer satisfactory providing teachers with the technical skills, without constructively aligning ICT with new teaching paradigms. Ledesma, does however highlight that many of the schools she visited were still in the early or middle stages of their programme; Balanskat, Blamire and Kelfa,. (2007) correspondingly suggest many schools are only just beginning in the ICT journey. When new technologies are adopted, learning how to use the technology often takes precedence over learning through the technology; nevertheless, Zhao, Frank and Elleson (2007, p. 163) assert teachers need in-depth and sustained assistance, not only in the use of the technology, but in their efforts to effectively integrate technology into the curriculum. The research generated by Burt and Davison (1998) found that the most effective professional development was whole school, or syndicate based, rather than focusing on individual teachers. This practice was later adopted and extended to ICT professional development across New Zealand schools. Ham et al. (2002) reported this model

significantly increased teachers' ICT skills, knowledge, attitudes and classroom usage in the cluster schools.

Rice, Dawley, Gasell and Florez's (2008) recent research into the unique needs of K-12 online teachers revealed that 72% of the 850 teachers surveyed participated in ongoing professional development. The most preferred delivery method was fully online and facilitated. The teachers identified 'how to use the communication technologies' as the most pressing PD need, interestingly pedagogical practices rated third after time management strategies. They found the importance of PD in networking and community building had the lowest ratings among all the categories surveyed. This finding contrasts with my earlier suggestion that it is advantageous to belong to a support network (p. 12).

Mishra and Koehler (2006) suggest the foundation of effective SL teaching requires far more than just an understanding of how linguistic and cultural concepts can be represented through the use of ICT. They believe specialist language teachers to successfully integrate ITC into their programmes, require knowledge and understanding of the multifaceted nature of learning and require training that focuses on pedagogy, more so than the technology. Hampel and Stickler (2008) believe teaching languages online requires yet another set of specific skills. The asynchronicity of communication in written conferencing and the lack of non-verbal clues in audio-conferencing are examples of new challenges for online language tutors. Despite these challenges, online language courses continue to increase, however there remains a scarcity of high quality

training available to teachers who deliver those courses. Di Pietrio, Ferdig, Black and Preston, (2008) claim to date there is little known about best practices in online education in the K-12 area.

Organisational change

Regardless what we might think as individuals about school innovation and or change, we are on an unequivocal pathway to becoming a 'knowledge based society.'

> The integration of ICT into all major social institutions and organisations means that the necessity to equip young people with the capacity to understand and utilise the potential of such environments is no longer an option, but is now an imperative (Cuttance, 2001, as cited in Pluss, 2006).

It is widely accepted that the application of ICT in regard to teaching and learning, has the potential to produce significant changes in educational practice (Enabling the 21st Century Learner: An E-learning Action Plan for School 2006-2010, p. 4). The use of online technologies as an innovation has been associated with radical change; however many of the accepted organisational strategies for managing such change, have failed to deliver the expected benefits and advantages (Ledesma, 2006). For the successful adoption and implementation of ICT, they must first be accepted by those in authority. Perris (1998) New Zealand's Acting Education Secretary stated that, "successful implementation of school related initiatives requires the expertise and approval of

education leadership." Vallance's (2008) research conducted in Singapore and Japan revealed a disparity between the two countries in the level of technology integration in their schools. Although both countries are technology driven, Japan's political elite are thwarting ICT integration in their schools. Vallance states, "Technology integration requires a coherent vision for systematic reform, a vision that must be supported by the entire educational community."

Heppell (2004) suggests that substantial change is required within educational systems, especially when research data shows that learners outside the system are achieving better outcomes than their 'in-system' peers. Similarly Siemens (2004) argues that educators have been lethargic in recognising the impact of ICT as a new learning tool, and even slower "to recognise the environmental changes in what it means to learn." If Lloyd (2006) is correct in saying, "new technologies are ecological in that they change the whole environment," then one would expect major school reform would be taking place, perhaps similar to that visualised by Papert (1993). Schools however, remain resistant to change and for a variety of reasons (Fullan, 1991). Researchers claim that applying innovation theory increases the chances of successful change and adoption of new practices. Tatnall and Davey (2003) contend that most models of innovation and change are too simplistic in explaining the complexity of ICT integration because it involves both human and non-human interactions. They believe the ecological model allows for the inclusion of this complexity. Brown (2004) challenges us to conceptualise new understandings of the complexity of integration, one in which schools are required

to make social and cultural shifts towards converting ICT practices into a managed platform for curriculum innovation and school renewal. Although people such as Rogers (1993, as cited in Hall 2005, p. 59) make the distinction between innovation and change, others such as Fullan (1991) see them as synonymous. Salomon (2000, as cited in Wang, 2008) states, "Education is far too important to society to be wiggled by a technological tail. Let technology show us what can be done, and let educational considerations determine what will be done in actuality." Senge (1999, as cited in Wang, 2008) suggests if we want to introduce innovations or transformations into a learning environment and sustain changes, then it is essential that we remodel the governance and organisational structures that are ultimately responsible for that change.

The leadership role of the principal remains the single most important factor affecting the successful integration of technology (Byron & Bingham, 2001, as cited in Afshari, Bakar, Luan, Samah & Fooi, 2008). A study conducted by Zhao and Frank (2001) suggested it is crucial for school administrators and teachers to have an optimistic view towards online learning, because students quickly sense whether or not they really believe in what they are promoting. Perris (1998) suggests enthusiasm alone is insufficient, there needs to an infrastructure that supports schools and principals not only financially, but with direction. The Enabling the 21st Century Learner: An E-learning Action Plan for School 2006-2010, provides such a framework and direction for schools. A report by the Education Technology Strategy Management Group commissioned by

the Department of Education in Northern Ireland in 2002 revealed in all best practice schools, the Principal had a clear vision of how ICT was to be developed.

Summary

The literature points to both the advantages and challenges associated with online technologies and online learning. Despite the myriad of studies conducted in the area of ICT, the fact remains teachers have done little to change their pedagogical practices even though they are using ICT (Pearson, 2005, p. 143). It could be argued there has been too great an emphasis placed on the technology as a 'tool,' and insufficient attention given to how educators can effectively transform learning. The role of the teacher in the learning process remains significant, although there needs to be a greater willingness by teachers to move the power base towards the learner. Finally all stakeholders in education need to be mindful of the 'complexities' in education and to be more circumspect in their expectations of what ICT can do to enhance teaching and learning. The ecological paradigm provides a useful theoretical framework in which to unravel and make better sense of the complexities associated with the integration of ICT into different settings (ecologies).

RESEARCH QUESTIONS

Main Question

What is the usefulness of online technologies in the teaching and learning of a second language?

Sub Question

What are the issues associated with using online technologies in the teaching and learning of a second language?

DEFINITION OF TERMS

Ecological perspective: uses ecological concepts from biology as a metaphor with which to describe the reciprocity between persons and their environments...attention is on the goodness of fit between an individual or group and the places in which they live out their lives (Sands, 2001).

Learning management system: (LMS) is used to describe diverse software applications that are designed to manage and deliver learning content and resources. A LMS usually provides social tools to support collaboration and communication, and generally comprises a variety of applications that have been amalgamated into an integrated package.

Podcast: A podcast is a series of audio or video digital media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players and personal computers.

Virtual School: A virtual school refers to an institution that is not 'brick and mortar' bound. All student services and courses are conducted through Internet technology. The virtual school differs from the traditional school through the physical medium that links administrators, teachers, and students.

Web 2: describes the trend in the use of World Wide Web technology and web design that aims to enhance creativity, information sharing, and, most notably, collaboration among users. These concepts have led to the development and evolution of Web-based communities and hosted services, such as social-networking sites, wikis, blogs, and folksonomies.

Wiki: A wiki is a page or collection of Web pages designed to enable anyone who accesses it to contribute or modify content.

METHOD AND SOURCES OF DATA

A dual case study methodology was employed with the purpose of developing an in-depth understanding of the topic through multiple perspectives, from which grounded theory was able to emerge. Case studies are not a methodological selection; rather they

are choices of what is to be studied (Stake, 2003, p. 134). This research is informed by the qualitative approach with the intention that it recognises the subjective. The task of the qualitative researcher is to capture peoples' interpretations of the realities of their world and to develop an understanding of participants' perspectives of the phenomenon under study (Burns, 2000, p. 11)

Settings and participants

Case Study One: Small urban high school (600-700 pupils)

Three Year 11 students of Japanese language

Teacher of Japanese language

School principal

Case Study Two: Virtual high school: USA

School's Communications Administrator

Distance teacher of Chinese (2)

Experts

Second language adviser

Distance Educator Administrator

Interviews

Eight semi-structured interviews took place; four were face to face and the others were conducted over the telephone. All interviews were audio-taped and fully transcribed. The rationale for using semi-structured interviews was that it offered a systematic opportunity for the collection of qualitative data. The semi-structured design allowed for consistency between interviews whilst providing some flexibility for deviation, clarification, or opportunity to elicit further information when it was deemed necessary (Burns, p. 225). The interviewees were given the questions prior to the interview with the purpose of allowing them greater time to be critically reflective of their practice and personal perspectives towards the use of ICT (Brookfield, 1995). Open ended questions were used to elicit fuller responses on which to capture thick data (Kvale, 1996). All participants were provided with a copy of their interview transcription to confirm what was written was true and correct; or afforded the opportunity to have any of their responses amended or deleted by the researcher.

Ethics

Ethical approval for this study was obtained from the University of Canterbury Ethics Committee. The commonly accepted core principles of ethical research were adhered to during the study (Tolich & Davidson, 1999 p. 70); they are listed below:

(a) verbal and written consent was obtained from the participants

(b) assurance of confidentiality and anonymity was provided to the participants. All data was kept secure, access was restricted to the critical friend and me. All

study materials were put onto a CD and given to the University for the retention period. Participants' names and place of work or study were not revealed or made identifiable.

(c) avoidance of harm remained a priority, participant safety was uncompromised

(d) participants were informed of their right to withdraw at any stage of the research study

(e) researchers are often presented with opportunities to deceive or distort findings; Darlington and Scott (2002, p. 26); Limerick, B., Burgess-Limerick, T., and Grace, M. (1996) suggests because interviewees entrust their words to the researcher, the researcher is expected to act with integrity.

Bias

As the sole researcher I was in many ways like the 'Lone Ranger,' a metaphor commonly used in the literature. Not having the luxury of working in a team, I remained cognisant that there is no value-free or bias-free approach (Burns, 2000, p. 473; Janesick, 2003 p. 56). To reduce bias during the interpretation process I used a colleague to 'critically question' my assumptions (Miles & Huberman, 1994). During the writing up stage I have attempted to be open to paradigmatic views different from my own (Paton, 2001, p. 543)

Data analysis

The study incorporates two levels of analysis: (a) the analysis of each case study through themes and thick description (Geertz, 1973, as cited in Stake, 2003, p. 148) with quotes from interviews and resources (b) cross case analysis: that which compares and contrasts the two case studies using the perspectives of outside experts. Altricher, Posh and Somekh (1993, p. 119) believe people are too rash in ascribing meaning to a situation or phenomenon, applying sound data analysis therefore helps us to better "see the world as a network of interrelationships" (an ecosystem) which makes us more comfortable in our environment.

The analysis began by coding data after the completion of the first interview. Not withstanding the extra time and effort it took to fully transcribe the interviews, it helps to provide greater validity (Silverman, 2001). It also demonstrates to the interviewee you are interested in and what they have to say and that you have not tampered with the data (Goodson & Sikes, 2001). Although coding is part of the analysis, it needs to be remembered that it is not the analysis itself (Coffey & Atkinson, 1996, p. 26); themes were identified and recorded. It soon became apparent that certain themes repeated themselves across the interviews. A colleague looked at the transcripts to identify any further themes; this added to internal validity. The data was reviewed several times until no new relevant categories could be identified, this process is referred to as 'saturating the data' (DiPietro, Ferdig, Black & Preston, 2008). Once the coding was completed the interpretation phase began. Conversations with the critical friend and adviser took place.

Additional data was sought from several participants to elucidate findings and interpretations.

Limitations

The guidelines set by the University of Canterbury suggest an EDTL 802 research project requires in the vicinity of 300 hours to complete. Therefore the foremost limitation of this study was the restricted time available to the researcher to produce a substantive piece of work. Had I the luxury of more time I would have conducted deeper and fuller interviews with the students in Case Study One. I had intended to make an observation of the students using Tsunagaaru, it wasn't until I arrived on the day for the observation that I found out I was unable to, the time of the year restricted rescheduling. It was problematic interviewing students in the US school; this meant I was unable to make student contrasts and comparisons. I recognise this study is only a glimpse of what happens in two distinctively different schools and therefore caution the expectation of generalisability to other cases as suggested by Stake (2003, p. 140).

FINDINGS AND DISCUSSION

Case Study One

The students

Eliciting and acting upon student voice is a powerful strategy to improve student learning in schools. If schools and teachers genuinely have the desire to empower students in their learning, then their voice needs to be given greater creditability (Deany, Ruthven & Hennessy, 2003). According to Neal (2005) capturing student voice provides additional insights into the usefulness of ICT in supporting student learning.

The first interview with the three Year 11 students took place in the teacher's home room. The teacher sat in during the interview; this action served two purposes, firstly, it provided safety for the pupils and interviewer; secondly, it provided an opportunity for the teacher to hear and reflect on the students' feedback (Brookfield, 1995). The three students were girls; they radiated an excitement at the opportunity of being asked for their opinions on the topic under investigation. It soon became obvious they were not only engaged learners, they were expert users of computer based technologies; they really did personify the term "digital natives." It is important to note there were only three students in this particular Japanese class. The size of the class may have been a contributor to the obvious rapport the students had with the teacher; they appeared at ease when expressing their opinions in front of her and on one occasion entered into

some banter. Jiang and Ramsay (2005) believe social interaction is at the heart of language learning and language use; they claim that rapport between students and teachers is integral to that interaction. The topic of social interaction will be revisited later in this section.

Similar to most secondary aged students in New Zealand and other industrialised countries, the three participants used the Internet/WWW both at school and home to support their learning over a range of subjects, including Japanese. The students indicated they were online three to six hours per week for educational activities. The students' positive attitude towards using the Internet to access Japanese language sites in class was confirmed by Student Two's response, "…I liked the one called Vocab Olympics and it really helped…" The students made reference to the game elements various sites provided, Student One expressed, "I am not sure what the site is called…like its got games on it." The literature points to games being a powerful motivator for younger and even older students (Zhao, 2005, p. 25). Brutt-Griffler (2008, p. 365) claims that new media play has an important role in foreign language teaching. Experienced language teachers have been aware of the importance of having games in their programmes for a considerable time, computer generated games simply offer teachers and students a new medium in which to incorporate their use. The teachers in Case Study Two stress the importance of games in language teaching and the fun component they provide for students (p. 48). The local SL adviser reiterated the importance of games as a motivator for learning, she stated, even as an adult learner, she

enjoyed playing Internet generated media language games. The SL adviser recalled the fun element in the Olympics programme described earlier, "…it was a fantastic hook for students around the country…"

As regular users of the Internet, the students believed it had become an essential tool (Zisman, 2001) in their learning, student two said, "I need the Internet for research…you can pretty much access anything." All three mentioned the alluring distractions that are presented when they are working online. Student One responded, "It can be quite good …but it can be distracting if you are at home doing it, because you have Bebo and all that sort of stuff." Student Two said, "Ah at home… yeah, I do get distracted also by links, because you have lots of links and things that pop up." According to Becker (2007) a study released by textbook publisher Houghton Mifflin, 43 percent of the 896 students questioned named the computer as their "distraction of choice." While Web sites can retrieve information in seconds, it is just as quick at finding blogs, videos and online games that are more interesting than school-related searches. If distraction is an identified barrier, students should not be given carte blanche access to the Internet at school. Neal (2007, p. 92) suggests restricting access and limitations is impeding and disengaging high school students' motivation to learn when they have readily available access at home. Restricted Internet access featured as an issue; Student Two voiced her frustration at being blocked when she was trying to access information because there was a link to Bebo. Nonetheless, the students recognised both merits and disadvantages in having restrictions at school. Student three said, "Actually school is pretty good,

because you can do research without getting distracted." In concurrence, Student One said:

> It can be quite good because you can have quite a lot of research on the Internet, but it can be distracting if you are at home doing it, because you have Bebo and all that sort of stuff. When you are at school you don't, cos [*sic*] it is blocked, so it is easier at school because you can focus on what you are doing.

While there are those who argue for the freedom that goes with democratic learning; National Administration Guideline 5(i) requires schools to provide a safe physical and emotional environments for students. This guideline means schools have a legal obligation to restrict Internet access to material which is considered offensive, harmful or that which compromises students' emotional safety. Not only is there the dilemma of restricting sites, there is the issue of the quantity of material available on the Internet and students' ability/inability to deal with it (Luckin, 2007). Internet entrepreneur Mark Pesce (2008) takes a critical view of programmes such as YouTube, suggesting they are insidious and do nothing to enlighten thinking. Having access to the WWW in many ways is like being in a lolly shop. It seems apparent from what the students have said about the distraction the Internet poses, they need help developing discerning skills. I believe Luckin is correct; the teacher needs to help students better comprehend and utilise what is available to them. The teacher's role needs to be more 'guide on the side' rather than 'sage on the stage,' an expression commonly referred to in the literature.

Although online learning brings greater freedom, the students said their main priority was to "pass the exam;" they said they were relying on the teacher to help them pass, not the technology.

The students recalled their experience of a video conference with a Japanese class; they asked for more interaction with native Japanese speakers and opportunities for authentic learning. Student three said, "There needs to be more stuff like meeting Japanese students, talking to them and going out and looking at more Japanese stuff." When asked whether they would be interested in using Tsunagaruu, a new social networking site developed for students learning Japanese where they could talk in real time to students in Japan, they all thought such a programme would be advantageous and motivational to their learning. The language adviser said, "There is almost an expectation that there are sites like Bebo and Facebook so it provides real context for the students and teachers…programmes like Tsunagaaru are so powerful." She argues participation in social networking is now firmly entrenched amongst the digital generation; therefore SL teachers need to utilise this new media with the view to further motivate student learning, not be afraid of it or restrict its use.

The classroom teacher

The teacher had been teaching Japanese for 15 years, it was her third year at the school. She had taught at several other schools and had been seconded to the local teachers' college. In a previous school she had taught ICT as a separate subject. Early

in the interview it soon became apparent she was passionate about her teaching and that she was committed to doing the best she could for her students. When asked to talk about her philosophy towards using online technologies in her teaching, she had no hesitation listing their merits and potential in the classroom and beyond. The teacher demonstrated her knowledge of effective ICT pedagogy; she was eager to talk about how she blended ICT technology into her everyday programme to scaffold student learning through the use of digitally generated language text, sound, pictures, videos, tables, graphs, simulations and models in the target language:

> I do have quite a good supply of flash cards or otherwise just using pictures from the computer in PowerPoint, using them as flash cards is something I do a lot. And often I can turn that into a little test they can do individually on the computer with the words that are in the PowerPoint. I do try and look for different activities that will keep their interest…. we also use Quia quite a lot, [An Internet game] they like Who Wants to be a Millionaire? kind of thing, and challenges.

The teacher's level of integration contrasts significantly with Ledesma's (2006) findings. It is obvious in her conversation that she recognised a lot of resources and expertise were necessary in order to provide the extended learning experiences desired for the students. Davis et al. (1997, p. 24) suggest for the most effective learning to take place requires authenticity. Van Olphen (2008 as cited in Cox, 2008) says, the WWW offers a spectrum of authentic materials for teachers and students; new technologies provide teachers with

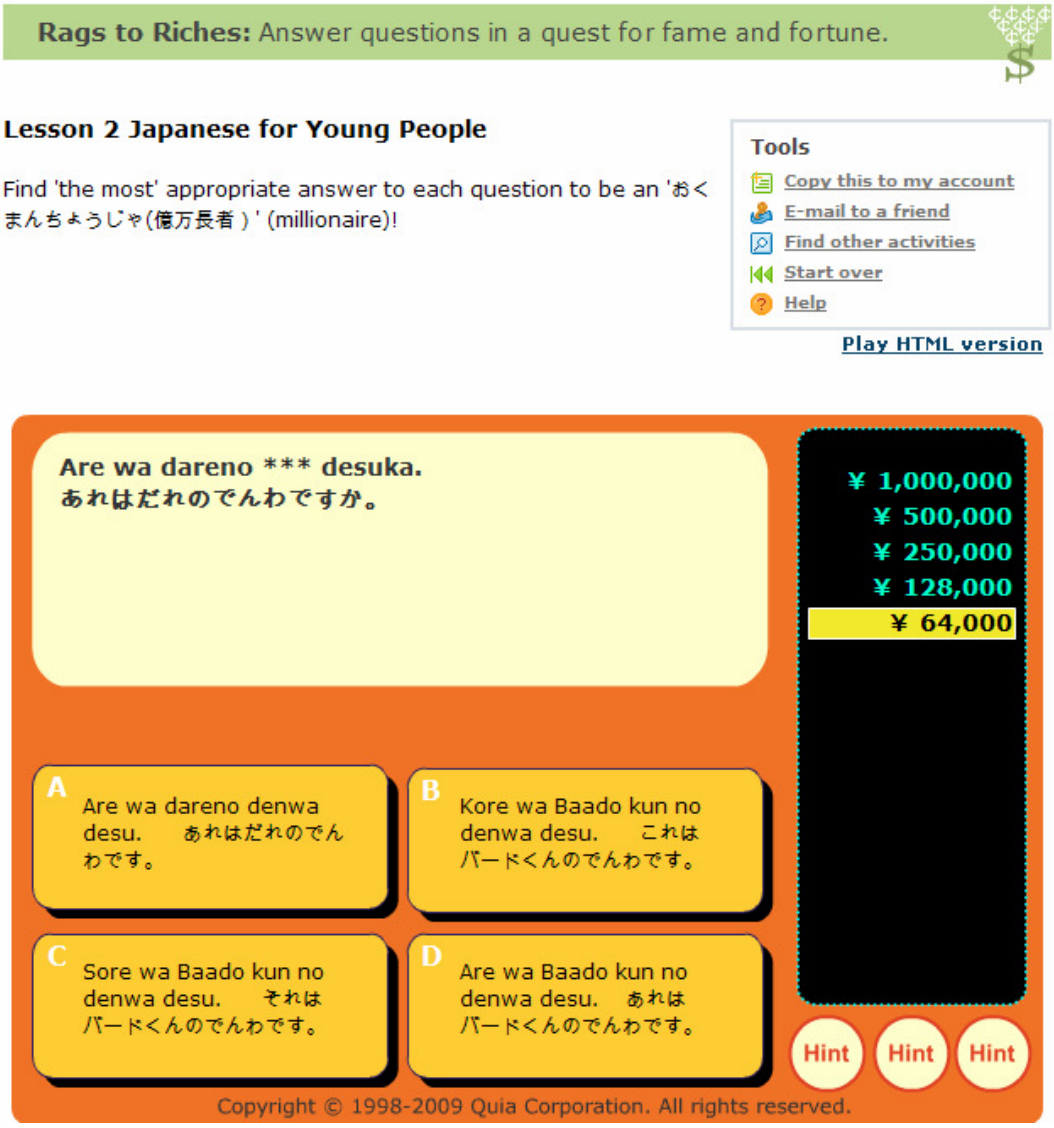
new opportunities to introduce culture to their students. The teacher regularly uses sites such as Obento, Figure 1 and Quia, Figure 2.

Figure 1

This programme makes use of full multimedia, notice where it states 99% fun. The graphics and art are designed to capture the attention of its teenage users.

The students had said these programmes are fun; they are designed to be highly motivational and authentic. The teacher said programmes like these saved her time making her own resources. One of the reasons why programmes such as the Olympics programme mentioned in the previous section are so popular is that teachers are becoming increasing involved in the development of sites. Software design is increasing building sound pedagogy into their construction (Kafai, Sandoval, Enyedy, Nixon & Herrera, 2004). Laurillard (2002, a cited in Kukulska-Hume & Sheild) says the design must ensure the user is not detracted from the task at hand, teachers need to be constantly monitoring the pedagogical merits of software.

Figure 2



Cox (2008) says the most used software such as the Microsoft Suite is designed for business environment not for educational purposes. Technological pedagogical knowledge and design of software needs to focus on advancing student learning and understanding.

Comprehensive use of other technologies was evident; the data projector was extensively used, MP3 players were regularly used by the students to listen to files downloaded from the Internet. The teacher also said she made good use of podcasts for her own learning. There was a sense the teacher had normalised technology, in other words it was embedded in her everyday practices (Bax 2003, as cited in Jager, 2007).

Despite the teacher's enthusiasm for utilising ICT, "I would love to do more stuff with them," she acknowledged there were a number of barriers that were stymieing her best efforts to provide a stimulating and pedagogically sound programme.

> A problem I have, my Year 10 students they are always timetabled against another Year 10 class who aren't doing languages, they are always doing computers, so I can never actually take the Year 10 class into the computer room at all. All I can do with that class is on just one laptop in the classroom probably with a data projector or with the kids taking turns.

In response to the students asking for more Internet access she replied:

> If they all had laptops that would be great, but they don't…Some of the computers we have are quite old and programmes like Quia, the computer can't do Java. We don't have a technician that can come into the class to help the students or teachers with computer issues, the technicians we employ are always working over where the server is and doing stuff for management…we don't get much support as teachers.

> When the computer crashes and we don't know why and we don't know how to fix it.

The teacher is clearly frustrated at the lack of readily available technical support, and sees it as a barrier. Balanskat, Blamire and Kelfa, (2007) say it is imperative teachers get technical support.

The teacher referred to the school's Internet usage policy, "...if the kids haven't signed their Internet use form it is tricky sometimes, I say go into Kidsweb and try this activity, some of them can't, so I need another activity." One would assume this issue is only minor and could be quickly resolved. Although the teacher accepted the need for Internet restrictions, she was clearly bothered as the next passage discloses:

> The kids have complained that they can't use YouTube because it is blocked; to me that's a pain, because I think YouTube is great. You take five minutes talking to them about a sumo match or you can show them a 30 sec video clip. I have to go home and download it for school. You just can't go on YouTube. Sites like Metacafe and all those sites are blocked, you can't get anything…They need to unblock the teachers really, apparently they can, but they choose not to.

The teacher implied having spontaneous access to the Internet in her home room was advantageous; she went to some length to highlight the importance of having a home room with wireless Internet:

> Having my own classroom is a bonus… Like if you are in another room and you are doing a reading comprehension about Hiroshima, and the kids say "where is Hiroshima?" you realise you can't use the map… Having immediate access to my stuff is really important; you take it for granted until you haven't got it.

Aside from the usefulness of ICT and online technologies, other variables are at play in determining student learning outcomes. Zhao, Pugh, Sheldon, and Byers (2002, as cited in Bolstad & Gilmore, 2006; Neal, 2005) suggest that teachers' enthusiasm to integrate ICT into their programmes are often hindered by factors beyond their control, they state, "school-wide culture and infrastructure have a significant impact on their success." For example, the teacher was concerned the community did not seem strongly behind learning another language, "they don't seem to think it's important. So I am kind of fighting a losing battle in that way." This perception contrasts significantly with the community's attitude towards learning a SL in Case Study Two. The New Zealand distance school administrator (expert) suggested, "...people thought Japanese was a ticket to earning big money, but it isn't." This statement exemplifies there are social factors affecting students' attitudes towards learning SL's. Diminishing parental or community interest may have accounted for the drop off in students electing to take

Japanese and for students continuing to take it beyond Year 11. This school could quite well put forward a case to offer its students online courses in Japanese. Having three students in a class is not cost effective. In fact the teacher was only being paid for two of the four hours she was teaching this class. One of the arguments the virtual school movement makes is, online courses are cost effective.

Although the teacher was enthusiastic towards teaching Japanese and highly skilled in the area of ICT integration, during her tenure at the school she had not received any formal ICT training. The teacher said, "If I can't do something I find out by myself...like the Wiki another teacher showed me and it's good, I need to figure out how to use the programme." The teacher reported she had not received any professional development in her capacity as a teacher of Japanese, although she qualified the statement by saying she had an opportunity to attend a course on Tsunagaaru earlier in the year. When I spoke to the language adviser of the difficulty the teacher had becoming a registered member, she said a lot of teachers missed the introductory course earlier in the year. It was at the end of Term One, "the teachers were tired, they need to be fresh, and teachers are busy people." She admitted more needed to be done to promote the programme and its usefulness. Teachers Zhao, Frank and Elleson's (2007, p. 163) assertion that teachers need in-depth and ongoing professional development may be valid; the reality is, it is not always affordable or manageable. The teachers at this school appeared to be equipping themselves with ICT skills and knowledge in their own time rather than through school wide ICTPD. Bolstad and Gilmore (2006) suggest there is widespread recognition that a

multifaceted array of practical and social factors unfold to support or prevent the innovative use of ICT in schools, therefore the teacher alone must not be held responsible for the successful integration of ICT into curriculum programmes.

The principal

The principal had been newly appointed to the school. Although he had a positive view toward the use of ICT and online technologies, he was more cautionary than the teacher about their usefulness. Whilst acknowledging the merits of online technologies he remained adamant teachers played an irreplaceable component in the learning process. The following personal view reaffirms what Fullan and Hargreaves (2000) say, regardless of the power of an ICT, the need for the teacher remains vital.

> I think there will be more and more online learning in the years to come. I do have some reservations; I have great belief in the strength of a teacher being able to support and guide, and question, and I am not sure if online can provide the same personal touch. I still retain faith in face-to-face.

Research findings have demonstrated that the principal remains the key driver in achieving successful ICT integration in schools (Balanskat, Blamire and Kelfa (2007); Byron & Bingham, 2001). The principal like many in his position has to balance the priorities within the school. Congruent with Ledesma ‘s (2006) assertion that most schools in New Zealand were only at the beginning stages of an ICT journey, the

principal believed the school was in “transition’ mode. Clearly the principal had a medium term vision for ICT, although when asked if students might be given the opportunity for enrolling in online classes or even working from home he said, “I don’t know about staying at home, but yes I see students doing courses outside school hours...” The principal was asked where he thought the school might be in the next several years in terms of online learning, he replied:

> I think the opportunities are there for work with other people, in other countries, it’s too good to turn down, so it will eventuate, but I think we will be struggling to move that much in the next two years, its financial as much as any thing …

He believed most progress would be around the area of the Intranet. He said, the school’s ICT committee was exploring the use of student and learning management systems:

> having your own file is something we are trying to do more of, where teachers have information about the course so the students can access it when they want and even from home, where they can file their own work and the teacher can access it and mark it, and can reply by email or whatever, that sort of use of technology will grow hugely and its not too far way. It will grow next year and the year after.

Balanskat, Blamire and Kelfa (2007, p. 38) indicate schools have invested in Learning Management Systems (LMS) to improve knowledge sharing, unfortunately the systems are primarily being used by teachers to communicate with other teachers and not to communicate with pupils and parents. The principal had said he had visited other schools where they were being used with enthusiasm; however he did not talk about their pedagogical use as the administrator has done in Case Study Two (p. 55). The New Zealand Ministry of Education has published guidelines for schools that are interested in using LMS; they state schools must be clear and confident about how online learning environments will enhance its teaching and learning practices.

The principal was pleased that the computer labs were fully booked, while at the same time recognised it was also a barrier, teachers could not use them without booking well in advance. He said that student accessibility to the Internet remained a significant issue:

> …there are a lot reasons for that. For one the physical construction of the school, if I won lotto tomorrow and had the money to buy it [*sic*], we have small concrete block bunkers of classrooms, that means I would have to move two or three desks outside to allow to put computers in, literally. So we have got some challenges there, and we are looking at them as a board and a school.

Unlike the principal who saw the need for more computers or another computer lab, the SL adviser believed that computer labs or desktop computers had limitations for SL

learning; she thought there needed to be more mobility for learners. “It’s being creative about how we view these things… I am really keen that teachers get a set of cell phones…the teacher can record the right pronunciation on it… students can listen whenever they like…you can personalise the learning.”

The principal briefly talked about how ongoing discussions were taking place on how to maximise the hardware they have. He said the Japanese teacher had mooted the idea that ICT did not have to be taught as a separate subject, it could be taught within the other subjects. He reaffirmed his position that energy needs to be directed into teaching and learning pedagogy as much as the purchase of new resources.

There was a discrepancy between the principal’s and teacher’s perspective of the need for further ICT professional development. The teacher had stated she and the other teachers had had no ICT professional development, on the other hand the principal implied that the teachers were not in need of ICTPD, “The staff has pretty good knowledge and skills, and they are breaking their necks to use it as much as possible in their teaching.” This study is only reporting the view of two parties, it is not the researcher’s job to suggest one party is correct and the other is not. It is important to note however, there is irrefutable evidence that quality and ongoing professional teacher development is essential if effective use of ICT is to occur (Zhao, Frank & Elleson, 2007, p. 163.) The principal’s finals remarks, “even though the kids know more than us, there is still a need for teacher input.” validates his position on the importance teachers

have play in the learning process and that we should not expect the technology to teach students how to think.

Case Study Two

The following section will contrast and compare the two case studies. Case Study Two is of a private Catholic high school in the United States of America (USA). The school has more than 600 students comprising of a diverse collection of races and socioeconomic classes; it is the regional training centre for all 55 catholic schools and it delivers virtual courses to many of its schools throughout the diocese. This study pays particular attention to the SL Chinese course they deliver to distance students. Data has been collected from interviews with two teachers, an archived lesson and the school's technology and communication administrator; interviewing students was deemed problematic.

The virtual school teachers

The two SL teachers are Chinese Mandarin native speakers; one was in her first year after graduating as a teacher and the second was a little more experienced. They teach grade six and seven students to 12 schools throughout the state. Each teacher has four classes, five days a week; the lessons are 40 minutes in duration using VC as the platform for the course delivery. There is a facilitator (teacher aide) in the room to monitor student behaviour and help with technical difficulties when required. The

teachers were asked to talk about their philosophy of online learning. Teacher two stated, "So at the beginning I thought it was challenging, after five months experience I think online is still doable, we can have the same results as the traditional face-to-face method." The teachers were quick to talk about the importance of interaction as a requirement for effective language teaching and learning (Jiang & Ramsay, 2005; Di Pietro, et al. 2008). Teacher One claimed, "Language learning and teaching involves a lot of interaction between the teacher and students." According to Strijbos, Martens and Jochems (2004, as cited in Hampel & Stickler, 2007) interaction in an online environment can be achieved through careful planning and adapting of activities to the online environment. Teacher One talked about authentic learning, suggesting students need to learn the culture as much as being able to communicate. She said half her time was used locating and preparing authentic materials and resources for her course. When asked how she could improve the programme she replied,

> The challenge is how to make the programme more interesting, how to get the students really involved and how to develop the course material which is not just copying from a text book. We have to read a lot of text books…

Both teachers claimed it was challenging trying to think of ways to provide authenticity online. Le Loup and Ponterio (2000) stated, "foreign language teachers are continually searching for better ways of accessing authentic materials." It was evident that both teachers were frustrated and challenged at not having a physical presence, however it

remains incumbent upon the teachers to use materials and the technology in a pedagogically sound and meaningful way (Di Pietrio, et al. 2008, p. 11). Both teachers made the following reflections:

1. They believed that teachers need to connect physically with their students; they inferred it is Chinese to do that, and that it was difficult to connect with a student without close proximity, teacher one claimed, "…the sense of a person you are talking to is different." Ramsay (2005) confers with this premise, maintaining a close physical presence facilitates learner-teacher rapport, an important element in successful pedagogical practice. Teacher One went on to say:

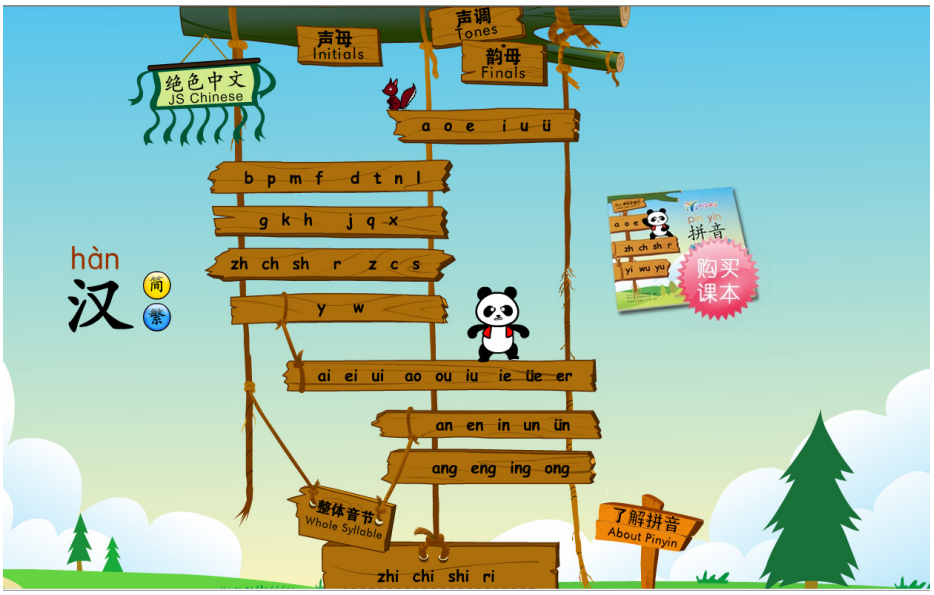
> I have built up a good a rapport, a relationship with the students but some [*sic*] is not there. In Chinese you want to scratch your skin, but you have heavy clothes and you can't, so you know what I mean, you have something in between.

2. They were unable to hear students when they were talking in pairs. In a normal setting they suggested they would be able to walk around the class and listen. To overcome sound difficulties exacerbated by the microphone technology, the teachers have to listen to one student at a time, rather than having them working in pairs. Teacher One commented: "…time wise it is not efficient as face-to-face." The teachers claimed that Chinese is a tonal language and smooth communication relies crucially on correct

pronunciation of tones, they believed it was not easy to hear exact tone through sound devices.

3. Playing certain games was difficult. Both teachers laboured the point of having a fun component. Internet games were used to support their programme. The students played in their own time not during the lesson.

Figure 3. An Internet used site used by the students to help learn sounds.



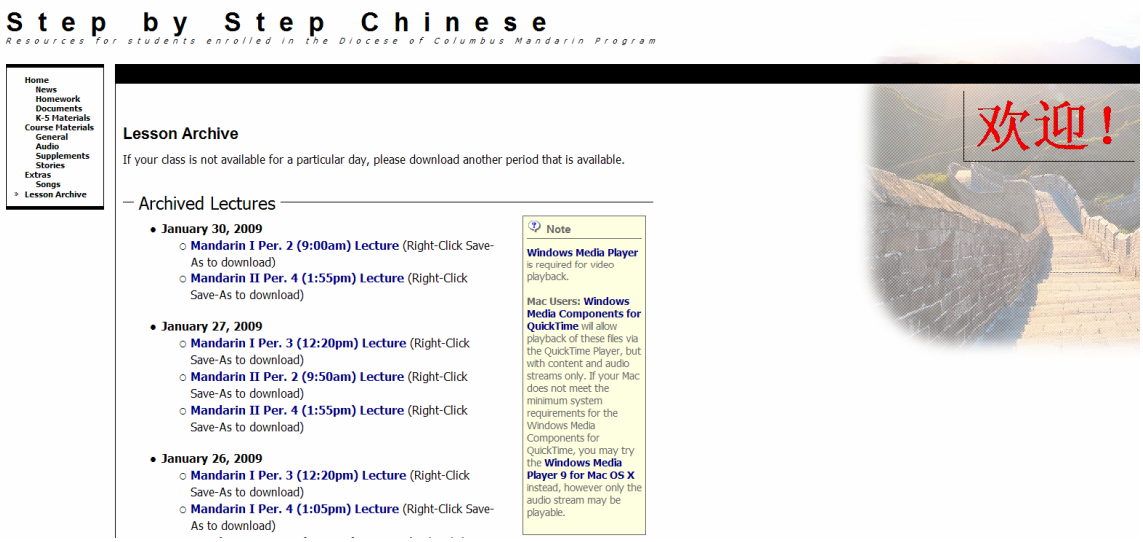
4. They reiterated the importance of close physical proximity to better enable the learner to imitate, facial expressions, lip movement, the use of teeth and tongue all crucial elements in language learning and use.

5. Teacher two said the present technology did not allow her to see the stroke order of the students when they were writing.

The teachers were committed to ongoing professional development. It appeared that professional development was truly part of the culture of the school and something Zhao, Frank and Elleson (2007) say is essential if schools are to effectively integrate ICT into the curriculum. Teacher two is currently enrolled at the local university and has undertaken a course for virtual SL teachers. The course focuses largely on pedagogy rather than the application of technology skills. A coach/mentor is assigned to each teacher. She was excited to say, "I have a personal trainer, I periodically send copies of my lesson archive [Refer to Figure 5] to him and he reviews them and gives me advice. We do it step by step; it is a one year programme." This approach aligns with Joyce & Showers' (1998) demonstration-practice-feedback model. The coaching mentoring model is also a powerful and effective form of professional development (Zachary, 2000). There was evidence that the teachers were involved in a community of practice, Teacher One stated:

> …we have a Chinese teachers' association… so we exchange emails, there is a Website we can look at and everyone can share your experience, your whatever, you can share, you can put your things there. We also have meetings.

Figure 4. The archived lessons available to the students



Hampel & Stickler's (2008) viewpoint mentioned in the literature review, suggests teaching languages online requires specific skills reinforces Brutt-Griffler's (2008, p. 365) suggestion, second/foreign language teaching is different from most other subjects because it is both skill and knowledge based. Teacher One has tried to capture that principle suggesting language teaching has a point of difference, "…for languages the teacher needs to participate at the same time…" Researchers suggest synchronicity is a huge advantage for language learning over asynchronicity (Hampel & Stickler, 2007). Because both teachers had younger students (grade 6 & 7) the synchronous mode of instruction seemed to be the most appropriate.

Virtual lesson observation

I was privileged to be given access to the Chinese lesson archives (Refer to Figure 4). The lesson I watched started with the teacher sitting in front of her computer monitor and mobile Webcam. The teacher introduced the lesson informing her students they were having a guest. Before the guest was introduced the teacher reviewed a previous lesson. The lesson content was prepared on a slideshow and presented to the students in their classrooms projected on to a screen. The words the teacher wanted read were highlighted. The students sat at their desks virtually interacting with the teacher. Although the instructional design of the lesson was traditional in the sense the teacher was in control, the students remained engaged during the entire 40 minute lesson. The behaviour of the students was exemplary; the teacher aide was not visible to the camera. The teacher had built in authenticity into her lesson by inviting a guest speaker who was a Chinese musician. The teacher used video clips and music throughout the lesson to help capture students' interest. Students regularly received instance feedback and affirmation from the teacher after saying words or phases in the target language during the lesson from the guest and the teacher. Best teaching synthesis highlights the importance of feedback (Hattie, 2009). The language adviser said "so often students need instant feedback," spontaneous feedback is seen as one advantage of synchronous online learning.

The administrator

The administrator's enthusiasm for learning aided and facilitated by ICT was unquestionable. Although a staunch advocate of online learning, he reiterated what the principal in Case Study One maintained (p. 41), "face-to-face teaching remains the ideal." He believed his challenge and that of his teachers is to find and utilise the next best alternative; claiming online technology can meet that challenge, and with the capacity of "maximising the presence of a master teacher." He believed there is an expectation for online teachers to deliver a programme that accounts for individual learning styles, and one that is pedagogically sound.

> You just can't deliver it one way, the way we did it 50 years ago, we have the tools to deliver the content in several different ways with variable effort and students are able to pick out what style in which they learn best.

The administrator outlined the merits of online learning, he believed it fitted with the "on demand 24 hour shopping" and the directions of 21st century education that is attempting to bring more equity to those who have been left out in the past (leave no child behind initiative). He was indefatigable in his argument towards the usefulness of ICT reaching and helping disadvantaged students.

> What right have we got to tell a student in this situation that you have to take…when we say you have to take this class...I want everyone to have access to the

technology, I like everyone to have the same equipment.

When asked to talk about barriers, he mentioned the difficulty of timetabling; the recipient schools have to construct their timetables to fit with the virtual schools course. When dealing with multiple classes and schools timetabling can be a problem. The New Zealand distance course administrator said timetabling was a definite issue for his organisation as well. McInerney, Hattam and Smyth (2001, as cited in Neal, 2005) claim the timetable is a main source of contention for effective learning. The type of course being delivered in this investigation (synchronous) requires that participants are online at the same time; therefore 'flexibility' a fundamental tenet of online learning is negated. The concept of anytime anywhere learning, in reality is not always achievable, imagine a transportation system without a timetable. Logistics and usefulness may be diametrically opposed, yet schools have to provide what is most achievable, not what might be seen as the most effective and equitable. A timetable is the trade off to be able to partake in a distance course.

The virtual school administrator thought resistance to change was the most critical barrier to the successful implementation of ICT and use of online technology. He acknowledged however, being in front of a camera is not easy and asserted that a new set of skills is required other than that expected of a teacher in a regular class; this stance corresponds with the view of Hampel and Stickler's (2008); Brutt-Griffler's (2008). He

suggests, the school's teachers are not alone in their quest to be effective online course facilitators:

> We want the teachers to become so comfortable that they don't pay attention to the technology, there has to be a fundamental buy in, and training so they are not distracted by it. We are trying to get this wonderful blend going where they do what they do best with healthy respect and knowledge, then support for how they are doing it. And that requires hand holding, it requires a lot of hand to hand work to try to get them to be comfortable and productive.

When the administrator talked of "hand holding," there was a sense that his organisation was supportive of teachers' total well-being as much as enhancing teaching skills and knowledge. This approach is referred to in the literature as 'the teacher as a person' (Fullan & Hargreaves, 2000, p. 5). He and the teachers provided robust evidence that professional development was given priority. The administrator was asked the following question; "where does professional development fit in the scheme of things?" his response was "it is the foundation of everything." This priority contrasts markedly from what professional development the teacher in Case Study One had received. Further data would need to be gathered before making assumptions about the amount of professional development the two schools were engaging in.

The administrator spoke highly of Gocourse a programme the high school uses for course management.

> What makes this programme so attractive is that the communication has a very high audio component to it, so it can be a written paper for example, the teacher can actually record comments on top of it and that is heard when the student reviews the paper, or when its an audio, the assignment you might have is to count one to ten, so when the student responds orally the teacher simply instead of saying you got number six wrong, can actually say this is how you pronounce it, so the audio piece asynchronously really supports the synchronous instruction.

The principal in the first case study was looking to use something similar, although perhaps not as sophisticated. As discussed earlier, there are varying views on the usefulness of these types of programmes. Learning management systems are constantly being developed and the design of the latest programmes appear to be offering greater pedagogical advantages in their design. The two Chinese teachers were not using the Gocourse to support their programme. However there is a presumption that as the Chinese programme develops and students carry on into high school then the use of such a programme will be highly valuable.

SUMMARY OF RESULTS

The case studies have provided a contrast of how two distinctively different schools are using ICT for the teaching and learning of a SL. As expected, similarities and differences emerged in the comparison. The results have clearly indicated the participants not only had a positive view towards ICT, they recognised and embraced its usefulness. ICT was firmly embedded the in ecology of the brick and mortar classroom, although it was blended with traditional teaching practices. There was recognition and perhaps a reluctant acceptance, that with the advantages ICT brings, it also creates challenges; this sentiment is exemplified in the comment made by the teacher in Case Study One, "That's just the way it is." A significant finding emanating from the data provided by students was the distractive nature of the WWW. Despite the challenges and barriers encountered by the teachers, there was conclusive evidence they were committed to delivering a 'fun' and pedagogically sound programme.

The findings generated from the teachers' interviews strongly reaffirm the importance of teacher presence and rapport (Di Pietrio, et al. 2008), two key elements of SL learning. The school principal's comment, "I still retain faith in face-to-face," the school administrator saying, "face-to-face teaching remains the ideal," and the two outside expert's acknowledgment that the teacher remains the cornerstone to successful SL learning, triangulates with what the literature says about the importance of the teacher (Fullan, 2001). The topic of interaction which featured repeatedly, is an

extension of teacher presence, one Chinese teacher captured the importance of this necessary interconnectivity, inferring the human dynamic is very important to their culture (Jiang & Ramsay, 2005).

The different contexts (schools) demonstrated the teachers had different challenges; although the teachers were trying to bring greater authenticity to their programmes, the teachers in Case Study Two were grappling with how they could meet individual learning styles. Good use was being made of Internet sites that were appealing to the students, all three teachers stressed the importance of finding methods to keep motivation high, one way was through the use of games. The teachers I had observed from the archived lessons were a using a traditional face-to-face methodology in a virtual medium. Their most critical challenge was finding the best way to compensate for not having a physical presence, whereas accessibility to the Internet was highlighted as the major issue in Case study One.

Wrongly or rightly there has been preponderance towards the human dimension in the results. This was never intentional on my part; it is the way the results have unfolded. What it does reinforce, is the notion of human and technology symbiosis, referred to in the literature review (p. 9). For the technology to be fully maximised it requires effective ongoing and in-depth professional development (Zhao, Frank & Elleson, 2007, p. 163). The fastest racing car does not always win the race, winning is usually dependent on the skill of the driver. The effective use of ICT in the classroom

remains heavily dependent on the teachers' expertise. The two schools had different levels of ICTPD taking place. It would be expected for a virtual school to place a higher reliance of ITCPD. There was evidence from both virtual teachers and the administrator that a special skill set was required for teaching using VC, this finding corresponds with the literature. Lastly, results have illuminated the importance of the principal and the school hierarchy in the successful implementation and effective use of ICT in the school.

CONCLUSIONS

I have certainly learned a great deal about qualitative inquiry and reflexivity while engaged in this study. If I was given the opportunity to turn the clock back, I would have approached the research differently; I definitely would have given more thought to the research design. When I started this project I thought it was going to be a relatively straight forward journey. At times I felt like the wandering Ulysses venturing into the unknown; phenomena that appeared easily explainable were in fact far more complex than appeared on the surface. The multiple layers of reflection drawn upon in writing and revising this paper has made me more aware of how far along the path I have progressed to becoming a qualitative researcher. Over the duration of this project I regularly questioned my epistemological and ontological assumptions. The ecological stance has helped me understand the reciprocity or symbiosis between ICT and human entities. While classroom ecosystems are embedded in a school's ecology;

interdependence exists between the two. Although a school's organisation and culture influence what happens in the classroom, the students and teacher conversely influence the school.

The aim of this paper has been to provide insights into the usefulness of ICT in the learning of a SL through multiple lenses. It has been challenging trying to balance the level of participant voice and that of my own, after all, are not the participants and I co-creating knowledge? If the task of the qualitative researcher is to capture peoples' interpretations of the realities of their world and to develop an understanding of participants' perspectives (Burns, 2000, p. 11), then I am confident that their voice has been well captured and expressed in this narrative. Having to change to a dual case study created complications, nevertheless it has provided a wider platform on which to make my assumptions. I am satisfied the findings in this study align with what the literature is saying about integrating ICT into the curriculum and in particular its usefulness in supporting the teaching and learning of a SL.

In many ways schools exist in part to maintain the status quo. The teacher in Case Study One was firmly in control of the tiller, although she demonstrated that the students were on occasions allowed to plot the direction of their learning. For the most part she and her students have to face strong head winds; accessibility to the Internet remains a major issue in the school.

The online learning movement is now seen as a vehicle for school reform. Technology has thrown down the gauntlet, the question is, are schools prepared to pick it up? One commonly cited merit of online learning is that it is student centred. Zucker and Kozma (2003, claim that learner-centreness principles and technology led educational reform are negated by virtual high schools because they actually dilute innovativeness to gain acceptance by traditional educators. It is suggested that many virtual high schools mimic regular schools systems with course credits, timetables and assignments, instead of embracing the learner-centred principles that support diverse learners and learning contexts anytime, anywhere. Online learning is often an activity being driven by the teachers, not the learner, learning is characterised by traditional instructional methods simply transferred into technologically enhanced learning environments (Hedberg, 2005).

I want to finish on a positive tack, the Internet, the WWW and online leaning are new phenomena and it is unfair to expect schools to have their ICT sails fully furled. Most schools are only beginning their voyage into unchartered waters. 21st century education is demanding students are equipped with the skills that enable them to take part in the knowledge based global economy, just as the early navigators needed skills to explore new horizons during the age of discovery. It is imperative schools have a well planned and defined ICT strategy that enables them to take full advantage of the technologies available to enhance student learning. The transformation of learning as

envisaged by Papert (1993) can only eventuate through pedagogical and structural change, not the reliance on ICT.

"Technology alone does not deliver educational success. It only becomes valuable in education if learners and teachers can do something useful with it." (OECD, 2001, p. 24)

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Appendix 1

16 September 2008

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Information and Request for Teacher Participant

Dear

As part of my requirements for a Masters of Teaching and Learning degree based at the University of Canterbury College of Education, I am embarking on a research project concerned with the integration of ICT in the teaching of second languages, namely Japanese. I trust you will agree to participate in a face to face interview on this topic and give your consent for me to make the necessary arrangements.

The general aim of this research project is to investigate the usefulness of integrating online technologies into your programme. Discussion will centre on; the merits and barriers of integrating ICT into your programme, professional development, the pedagogy that fits with ICT and second language acquisition. You will also be asked to talk about your impressions of and the use/non-use of Tsunagaaru.

It is anticipated the interview will take between 40 to 50 minutes. The interview will be audio-taped. All information you provide will be confidential and stored in a secure place. Findings that could identify individuals or their place of work will not be published. The University regulation requires data is stored for at least 5 years; your data will be coded in such a way to ensure anonymity. Any quotations used in the publication will be non-attributable; nonetheless I need your permission to quote from your interview. You have the right to withdraw at any time without recourse up until the time of publication. You will be given a draft copy of the research project to check for inaccuracies or any prejudicial statements that would cause harm.

The University of Canterbury Ethics Committee has reviewed and approved this study. There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
PO Box
Christchurch
(03) 3642241

My supervisor is Alan Scott from the University of Canterbury College of Education. (Phone 3458286)

I thank you in anticipation for allowing me to conduct this research at your school, your support is appreciated.

Yours faithfully,

Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph. (03) 3322463
Work Ph. (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 2

13 October 2008

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Consent agreement for teachers

A Masters of Teaching and Learning degree research study under the supervision of Alan Scott in the Masters of Teaching and Learning programme at the University of Canterbury College of Education.

Informed consent agreement

I have read the enclosed letter explaining the nature and purpose of the research and understand that participation in this research is voluntary.

I am not bound to participate in the research interview and I understand there will be no penalty or loss of benefit to me should I choose not to participate.

I understand that I am able to withdraw from this research at any time by contacting the researcher.

I have been informed of complaint procedures and I understand that any data obtained from the interview will be kept in a secure place at all times, will be kept anonymous and will be used for this research project only.

I _____ agree to participate in this research project, undertaking to participate in a face to face interview.

Signed: _____ Date: _____

There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
PO Box
Christchurch
Phone (03) 3642241

Researcher
Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph (03) 3322463
Work Ph (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 3

16 September 2008

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Information and Request for the Principal

Dear

My name is Mitch Dieudonné principal of St Joseph's in Lyttelton; I am presently on study leave. As part of the requirements for a Masters of Teaching and Learning degree based at the University of Canterbury College of Education, I am embarking on a research project concerned with the integration of ICT in the teaching of second languages, namely Japanese. I wish to conduct my research by interviewing you the principal, one staff member, a Japanese language student, and observing a Year 11 class using Tsunagaaru at your school. It is anticipated the teacher interview will take between 40 to 45 minutes, your and the students' interview, 20 to 30 minutes; they would take place on your school site. Interviews will be audio-taped. I have attached a copy of the interview questions and the principal's consent form. I would like to conduct the research early in term four.

All information provided will be confidential and stored in a secure place. Findings that could identify individuals or their place of work will not be published. The University regulation requires data is stored for at least 5 years; data will be coded in such a way to ensure anonymity. Any quotations used in the publication will be non-attributable. All participants have the right to withdraw at any time without recourse up until the time of publication. The teacher will be given a draft copy of the research project to check for inaccuracies or any prejudicial statements that would cause harm.

The University of Canterbury Ethics Committee has reviewed and approved this study. There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
Private Bag 4800
Christchurch
Phone (03) 364 2241

My supervisor is Alan Scott from the University of Canterbury College of Education. (Ph. 3458286)

I thank you in anticipation for allowing me to conduct this research at your school, your support is appreciated.

Yours faithfully,

Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph. (03) 3322463
Work Ph. (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 4

13 October 2008

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Consent agreement for the principal

A Masters of Teaching and Learning degree research study under the supervision of Alan Scott in the Masters of Teaching and Learning programme at the University of Canterbury College of Education.

Informed consent agreement

I have read the enclosed letter explaining the nature and purpose of the research and understand that participation in this research is voluntary.

I understand that the teachers and students are able to withdraw from this research at any time by contacting the researcher.

I have been informed of complaint procedures and I understand that any data obtained from the interview will be kept in a secure place at all times, will be kept anonymous and will be used for this research project only.

I _____ agree to allow this research project to take place.

Signed: _____ Date: _____

The University of Canterbury Ethics Committee has reviewed and approved this study. There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
PO Box
Christchurch
(03) 364 2241

Researcher
Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph. (03) 3322463
Work Ph. (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 5

16 September 2008

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Information and Request for Student Participants

Dear

As part of my requirements for a Masters of Teaching and Learning degree based at the University of Canterbury College of Education, I am embarking on a research project concerned with the integration of ICT in the teaching of second languages, namely Japanese. I trust you will agree to participate in a face to face interview on this topic and give your consent for me to make the necessary arrangements.

The general aim of this research project is to investigate the usefulness of integrating online technologies into your programme. The interview will centre on your perspectives of using online technologies to support your learning of Japanese. You will also be asked to talk about your impressions of and the use/non-use of Tsunagaaru.

It is anticipated the interview will take between 25 to 35 minutes. The interview will be audio-taped. All information you provide will be confidential and stored in a secure place. Findings that could identify individuals or their place of work will not be published. The University regulation requires data is stored for at least 5 years; your data will be coded in such a way to ensure anonymity. Any quotations used in the publication will be non-attributable; nonetheless I need your permission to quote from your interview. You have the right to withdraw at any time without recourse up until the time of publication. You will be given a draft copy of the research project to check for inaccuracies or any prejudicial statements that would cause harm.

The University of Canterbury Ethics Committee has reviewed and approved this study. There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
Private Bag 4800
Christchurch
Phone (03) 345 8246

My supervisor is Allan Scott from the University of Canterbury College of Education. (Phone 3458286)

I thank you in anticipation for allowing me to conduct this research at your school, your support is appreciated.

Yours faithfully,

Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph. (03) 3322463
Work Ph. (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 6

16 September 2008

Investigating the usefulness of online technologies in the teaching of a second language in a secondary school: A Case Study

Consent agreement for the students

A Masters of Teaching and Learning degree research study under the supervision of Alan Scott in the Masters of Teaching and Learning programme at the University of Canterbury College of Education.

Informed consent agreement

I have read the enclosed letter explaining the nature and purpose of the research and understand that participation in this research is voluntary.

I understand that I able to withdraw from this research at any time by contacting the researcher.

I have been informed of complaint procedures and I understand that any data obtained from the interview will be kept in a secure place at all times, will be kept anonymous and will be used for this research project only.

I _____ agree to allow this research project to take place.

Signed: _____ Date: _____

The University of Canterbury Ethics Committee has reviewed and approved this study. There is a complaints procedure which requires that all participants be informed that if they have a complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair
Ethical Clearance Committee
University of Canterbury
Private Bag 4800
Christchurch
Phone (03) 345 8246

Researcher
Mitch Dieudonné
113 St Martins Rd
St Martins
Christchurch 8022
Home Ph. (03) 3322463
Work Ph. (03) 3288140
Email: mitchdieu@paradise.net.nz

Appendix 7

Semi structured interview questions for the teacher

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

1) How long have you been teaching? How long have you been teaching Japanese as a second language?

2) Tell me about the approaches you currently use to teach Japanese.

3) What are the strengths of your Japanese programme?

4) What do you think could be improved in your Japanese programme?

5) What supports would you need to improve the programme further?

6) How are you using ICT to teach Japanese? Does this fit with the school's philosophy/direction for ICT integration?

7) What do you see as the merits of integrating ICT (including online) into second language teaching?

8) Can you list what ICT's you have used in your teaching programme? Which have been successful and unsuccessful? Give the reasons why?

9) Are you familiar with Tsunagaruu? Have you had PD specifically centred on Tsunagaaru? Can talk about the how you have used it or the reasons for not using it thus far.

10) Do you anticipate a new approach to SL learning emerging through ICT? Paradigm change?

Thank you for your participation in this interview

Appendix 8

Semi structured interview questions for the principal

1) How do you personally feel about online learning?

2) Can you tell me about your school's ICT philosophy?

3) What areas are you most satisfied with in ICT at your school?

4) Are you able to talk about the barriers the school encounters in achieving its goals and aspirations in regard to online learning?

5) What supports are needed for you and the school to achieve your short term goals in online learning?

6) Where do you think your school will be in 5 years time in terms of ICT development (this includes online learning)?

   Please feel free to talk about any other dimensions concerning this topic.

Thank you for your participation in this interview

Appendix 9

Semi structured interview questions for the students

1. How long have you been learning Japanese?
2. Tell me how you use the internet to support your learning.
3. How often do you use the internet?
4. What sites do you use?
5. Can you differentiate between school and home use?
6. What barriers restrict your learning?
7. What would you change in the Japanese programme if you had the opportunity?
8. Would you like to use Tsunaagaru? Why?
9. How could your learning be improved? You can talk generally and also talk about how your Japanese learning can be supported.

Thank you for your participation in this interview

Appendix 10
Integrating online technology and second language
2 December 2008

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Information and Request for Teacher/Adviser/Administrator Participants

Dear _____

As part of my requirements for a Masters of Teaching and Learning degree based at the University of Canterbury College of Education, I am embarking on a research project concerned with the integration of ICT in the teaching and learning of second/foreign languages. I trust you will agree to participate in a telephone/online or face-to-face interview on this topic and give your consent for me to make the necessary arrangements.

The general aim of this research is to investigate the advantages and challenges associated with using online technologies to support the teaching and learning of a second or foreign language. Discussion will centre on; the merits and barriers of using online technology, professional development and the pedagogy that fits with ICT.

It is anticipated the interview will take 25 to 30 minutes. Findings and any quotations used in the publication will be non-attributable. All information you provide will be confidential and stored in a secure place for at least 5 years; this is a University regulation. You have the right to withdraw at any time without recourse up until the time of publication. You will be given a draft copy of the research project to check for inaccuracies or any prejudicial statements.

The results of this study may be submitted for publication to national or international journals or presented at educational conferences, and you may be asked at any time for additional information or results from this study.

My supervisor is Alan Scott from the University of Canterbury College of Education. Phone (03) 3458286

I look forward to working with you.

Yours faithfully,

Mitch Dieudonné

113 St Martins Rd
St Martins
Christchurch 8022
Home Ph (03) 3322463
Work Ph (03) 3288140
Email: mitchdieu@paradise.net.nz

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1. This project has received ethical approval from the University of Canterbury College of Education Ethical Clearance Committee.

2. Complaints may be addressed to:
   Dr Missy Morton, Chair, Ethical Clearance Committee
   College of Education, University of Canterbury
   Private Bag 4800, CHRISTCHURCH Telephone: 345 8312

Formal title of project: Integrating online technology and second language

Appendix 11
Integrating online technology and second language
2 December 2008

Consent agreement for teachers/administrator/adviser

A Masters of Teaching and Learning degree research study under the supervision of Alan Scott in the Masters of Teaching and Learning programme at the University of Canterbury College of Education.

Informed consent agreement

I have read the enclosed letter explaining the nature and purpose of the research and understand that participation in this research is voluntary.

I am not bound to participate in the research interview and I understand there will be no penalty or loss of benefit to me should I choose not to participate.

I understand that I am able to withdraw from this research at any time by contacting the researcher.

I have been informed of complaint procedures and I understand that any data obtained from the interview; will be kept in a secure place at all times, will be kept anonymous and will be used for this research project only.

I _____ agree to participate in this research project, undertaking to participate in an interview.

Signed: _____ Date: _____

1. This project has received ethical approval from the University of Canterbury College of Education Ethical Clearance Committee.

2. Complaints may be addressed to:
   Dr Missy Morton, Chair, Ethical Clearance Committee
   College of Education, University of Canterbury
   Private Bag 4800, CHRISTCHURCH Telephone: 345 8312

Formal title of project: Integrating online technology and second language

Appendix 12
Integrating online technology and second language
12 January 2009

Semi structured interview questions for the SL virtual teacher

1. Can you please talk about the usefulness of integrating online technologies in supporting the teaching and learning of second languages? (this is a personal view)

2. What do you think is the most effective way to teach and learn a SL?

3. What is the responsiveness of the students you work with in regard to learning a SL under this mode (online, video)?

4. In your experience as a language teacher using online technologies, what barriers are presented to teachers, students and schools in using ICT to support the teaching and learning or a SL/foreign language?

5. What changes could be made to make the use of online technologies more effective for SL/FL language teachers?

6. Can you list what ICT's or online programmes or software you are using to support your programme?

7. Do you anticipate a new approach to SL/FL emerging through ICT? Paradigm change?

Thank you for your participation in this interview